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EXAMINER	
WANG, JIN CHENG	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/698,195	Applicant(s) JANNINK, JAN F.	
	Examiner Jin-Cheng Wang	Art Unit 2672	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,7-13,15-23,26 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 5, 7-13, 15-23, and 26-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendments filed on 08/10/2004 have been entered. Claims 2, 4, 6, 14, and 24-25 have been canceled. Claims 1, 3, 5, 7-13, 15-23, and 26-27 are pending in the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5, 7-13, 15-23, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Chilimbi et al. U.S. Pat. No. 6,330,556 (hereinafter Chilimbi).

3. Claim 1:

The Chilimbi reference teaches a method of information structuring in a data set containing a plurality of items (see the abstract), comprising:

Ranking related objects based upon relationship strength (*reordering takes place wherein field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout*

configuration affinity-Note that affinity graph encompasses a wide range of graphs as taught by the cited reference including the layout configuration affinity graph), the ranking including for each related object to a selected object, calculating an affinity value between each of the related objects and the selected object based upon one or more criteria (*Chilimbi teaches affinity value between each of the related objects and the selected object is the weight assigned to the edge in the affinity graph to represent the field affinity which is a function of temporal information and execution frequency with each data structure access point as derived from the trace file. Chilimbi further discloses in column 17-18 an object affinity graph is a weighted undirected graph in which nodes represent objects and edges encode temporal affinity between objects. From Chilimbi, it is therefore clear that the weight assigned to the edge in the affinity graph represents the relationship strength between the related object and the selected object. Moreover, Chilimbi teaches in recreation of the affinity graph a temporal ordering of base object addresses and picking the object with the highest affinity edge weight and performing a greedy depth-first traversal of the entire object affinity graph starting from the selected object (column 18). Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected object. In the picking of the first node and the next node, etc., the related objects are ordered according to the affinity weights and the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches ranking for each related object to a selected object. See Figures 2-3, 5 and 7; column 6-18*); and

Ordering each of the related objects in the data set according to the affinity value between the related object and the selected object (*Chilimbi teaches affinity value between each of the*

related objects and the selected object is the <u>*weight*</u> *assigned to the edge in the affinity graph to represent the field affinity which is a function of temporal information and execution frequency with each data structure access point as derived from the trace file. Chilimbi further discloses in column 17-18 an object affinity graph is a weighted undirected graph in which nodes represent objects and edges encode temporal affinity between objects. From Chilimbi, it is therefore clear that* <u>*the weight assigned to the edge in the affinity graph represents the relationship strength*</u> *between the related object and the selected object. Moreover, Chilimbi teaches reordering in the re-creation of the affinity graph wherein field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout configuration affinity. In the recreation of the affinity graph, a temporal ordering of base object addresses occurs and the object with the highest affinity edge weight is picked and a greedy depth-first traversal of the entire object affinity graph starting from the selected object is then performed (column 18). Chilimbi discloses* <u>*visiting the next node connected by the edge with the greatest affinity weight*</u> *and thus the next node having the greatest affinity weight is picked among the related objects to the selected first object. In the picking of the first node and the next node as related to the first node, etc., the related objects are ordered according to the affinity weights and* <u>*the node with the greatest affinity weight is picked.*</u> *Therefore, Chilimbi teaches ordering each of the related objects in the data set according to the affinity value between the related object and the selected object*);

Clustering related objects (clustering related database objects in the same cache block; column 12-13); and

Computing the number of affinity charts per object (affinity graphs can be drawn based on the database objects in the cache block for each object), wherein the one or more criteria includes a subjective measurement (*e.g., the one or more criteria may be just an objective measurement such as the weight assigned to the edge in the affinity graph without taking into consideration of a subjective measurement. Nevertheless, Chilimbi teaches affinity graphs can be drawn based on the database objects in the cache block for each object and metrics have been used to evaluate structure field orders wherein the re-ordering takes place by the greedy algorithm taking into consideration of one or more criteria including* ***the subjective measurement such as the metadata created by the programmer, i.e.,*** *the programmer's subjective measurement for imposing the constraints which determines the reordering of the layout in the affinity graph, wherein the re-ordering accounts for the field constraints defined by the metadata created by the programmer. Moreover, the subjective measurement such as the recommended changes can be incorporated in the generation of the layout recommendation to perform the dynamic reordering of fields and to provide ordered list of data objects. See Figures 2-3, 5 and 7; column 6-10*).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 2 except additional claimed limitation of objective measurement. However, the Chilimbin reference further discloses the claimed limitation of the objective measurement (Metrics have been used to evaluate structure field orders wherein the re-ordering takes place by the greedy algorithm taking into consideration of the subjective measurement such as the metadata

created by the programmer wherein the re-ordering accounts for the field constraints defined by the metadata. See column 6-10).

4. Claim 5:

The Chilimbin reference teaches a method of generating a graphic layout, comprising:

Selecting a principal node for the graphical layout (such as the node a; see figures 2-3, 5 and 7);

Generating at least one affinity chart in connection with the principal node (*figures 2-3 and 7; column 6-18; Chilimbi teaches reordering in the re-creation of the affinity graph wherein edges between data elements in different data structures are not even put in the model for building the affinity graph-column 7 and field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout configuration affinity. In the recreation of the affinity graph, a temporal ordering of base object addresses occurs and the object with the highest affinity edge weight is picked and a greedy depth-first traversal of the entire object affinity graph starting from the selected object is performed-column 18. Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected object. In the picking of the first node and the next node, etc., the related objects are ordered according to the affinity weights and the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches*

picking the first node with the highest affinity edge as the principal node in the reordering and recreation of the affinity graph), the at least one affinity chart comprising an affinity curve (figures 2-3, 5 and 7 and 19); and

Sequentially establishing related items along the at least one affinity chart by rank (Metrics have been used to evaluate structure field orders wherein the re-ordering takes place by the greedy algorithm taking into consideration of the subjective measurement such as the metadata created by the programmer wherein the re-ordering accounts for the field constraints defined by the metadata. See column 6-10).

Claim 7:

The claim 7 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of a list of related items. However, the Chilimbin reference further discloses the claimed limitation of a list of related items (such as the neighboring fields in the affinity graph; see column 9 and Figures 2-3, 5 and 7).

Claim 8:

The claim 8 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of positioning the selected principal node at a prominent location in said graphical layout. However, the Chilimbin reference further discloses the claimed limitation of positioning the selected principal node at a prominent location in said graphical layout (the nodes a, b, c have been placed in the prominent locations in the graphical layout as shown in figure 2-3, 5 and 7).

Claim 9:

The claim 9 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of computing the size of the item. However, the Chilimbin reference further discloses the claimed limitation of computing the size of the item (using the field sizes; column 9).

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of the gradients to suggest item affinity level. However, the Chilimbin reference further discloses the claimed limitation of the gradients to suggest item affinity level (hot object(class) or cold object(class) and clustering or coloring, and attributes and/or levels of objects in the affinity graph to indicate the affinity level; see Figure 5 and column 12-13).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the color gradient. However, the Chilimbin reference further discloses the claimed limitation of the color gradient (hot object(class) or cold object(class) and clustering or coloring, and attributes and/or levels of objects in the affinity graph to indicate the affinity level; see Figure 5 and column 12-13).

Claim 12:

The claim 12 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the size gradient. However, the Chilimbin reference further discloses the claimed limitation of the size gradient (e.g., Figure 5).

Claim 13:

The claim 13 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of preventing overlap of related items. However, the Chilimbin reference further discloses the claimed limitation of preventing overlap of related items (e.g., field constraints preventing information overlap of related items; column 9-10).

5. Claim 15:

The claim 15 encompasses the same scope of invention as that of claims 1, 8 and 13. The claim 15 is subject to the same reasons given in claims 1, 8 and 13.

Claim 16:

The claim 16 encompasses the same scope of invention as that of claim 15 except additional claimed limitation of expressing closeness along shaped segments, emanating from j's position. However, the Chilimbin reference further discloses the claimed limitation of expressing closeness along shaped segments, emanating from j's position (figures 2, 3, 5 and 7; column 12-13).

Claim 17:

The claim 17 encompasses the same scope of invention as that of claim 16 except additional claimed limitation of curved segments. However, the Chilimbin reference further discloses the claimed limitation of curved segments (figures 2, 3, 5 and 7; column 12-13).

6. Claim 18:

The claim 18 encompasses the same scope of invention as that of claims 1, 5, 7-8, 11, 13 and 15. The claim 18 is subject to the same reasons given in claims 1, 5, 7-8, 11, 13 and 15.

7. Claim 19:

The claim 19 encompasses the same scope of invention as that of claims 1, 5, 7-8, 11, 13 and 15. The claim 19 is subject to the same reasons given in claims 1, 5, 7-8, 11, 13 and 15.

8. Claim 20:

The claim 20 encompasses the same scope of invention as that of claims 15 and 18. The claim 19 is subject to the same reasons given in claims 15 and 18.

9. Claim 21:

The claim 21 encompasses the same scope of invention as that of claims 1, 5, 7-8, 11, 13 and 15. The claim 21 is subject to the same reasons given in claims 1, 5, 7-8, 11, 13 and 15.

Claim 22:

The claim 22 encompasses the same scope of invention as that of claim 21 except additional claimed limitation of laying out graphs. However, the Chilimbin reference further discloses the claimed limitation of laying out graphs (figures 2, 3, 5 and 7; column 9-10).

10. Claim 23:

The claim 23 encompasses the same scope of invention as that of claim 21 except additional claimed limitation of populating a list of related items. However, the Chilimbin reference further discloses the claimed limitation of populating a list of related items (populating a list of related items in the memory block or the affinity graph; figures 2, 3, 5 and 7; column 9-10).

11. Claim 26:

The claim 26 encompasses the same scope of invention as that of claim 15 except additional claimed limitation of a computer readable medium. However, the Chilimbin reference further discloses the claimed limitation of a computer readable medium (figure 1; column 5-6). Other limitations are subject to the same reasons as given in claim 15.

12. Claim 27:

The claim 27 encompasses the same scope of invention as that of claim 15 except additional claimed limitation of a system. However, the Chilimbin reference further discloses the claimed limitation of a system (figure 1; column 5-6). Other limitations are subject to the same reasons as given in claim 15.

Remarks

1. Applicant's arguments, filed 08/10/2004, have been fully considered but they are not deemed to be persuasive.

2. Applicant argues in essence with respect to claims 1 and 21 and similar claims that:

"Applicant, desiring to proceed towards allowance of the present application, respectfully submits that the patent to Chilimbi et al. does not anticipate Applicant's independent claim 1 for at least the following reasons. Applicant claims ranking related objects based on relationship strength, **the ranking including for each related object to a selected object**. This is not what the Chilimbi et al. reference teaches. According to Chilimbi et al., 'an operation by an application on one field will contemporaneously or immediately be followed by an operation on another field. ...This results in a high temporal access affinity for those two elements.' (col. 6, lines 17-24) Further, 'A field affinity graph is constructed. . . The edges are weighted to indicate field affinity, which is a function of temporal information and execution frequency with each structure access point as derived from the trace file.' (col. 6, lines 58-65, emphasis supplied) Chilimbi et al., then, is not teaching the ranking of related objects based on relationship strength, but rather the frequency of contemporaneous access to classes of objects. Further, Applicant claims the ranking for each related object to a selected object. Figure 3 of the Chilimbi et al. reference, cited by the Office, but for indiscemible purpose, illustrates nodes or fields.' the nodes are representative of all instances of the data structure." (col. 6, lines 61-62) Therefore, each node or field does not represent each related object or a selected object. The Chilimbi et al. reference does go on to describe that 'to construct the field affinity graph, each structure instance is used to construct an instance field affinity graph" (col. 7, lines 8-9). Even if this could be stretched to capture the 'each related object' claimed by Applicant, this cannot also then teach ranking each related object to a selected object."

This is not found persuasive for the reasons given below. Chilimbi teaches affinity value between each of the related objects and the selected object is the weight assigned to the edge in the affinity graph to represent the field affinity which is a function of temporal information and execution frequency with each data structure access point as derived from the trace file. Chilimbi further discloses in column 17-18 an object affinity graph is a weighted undirected graph in which nodes represent objects and edges encode temporal affinity between objects. From Chilimbi, it is therefore clear that the weight assigned to the edge in the affinity graph represents the relationship strength between the related object and the selected object. Moreover, Chilimbi teaches in recreation of the affinity graph a temporal ordering of base object addresses and picking the object with the highest affinity edge weight and performing a greedy depth-first traversal of the entire object affinity graph starting from the selected object (column 18). Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected object. In the picking of the first node and the next node, etc., the related objects are ordered according to the affinity weights and the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches ranking for each related object to a selected object.

3. Applicant argues in essence with respect to claim 1 and similar claims that:

"Applicant also claims ordering each of the related objects in the data set according to the affinity value between the related object and the selected object. Chilimbi et a1., on the other hand, teach generating a 'weighted affinity graph" with affinity graph being defined to represent high temporal access, 'where edge weights are proportional to the frequency

of contemporaneous access" (col. 7, lines 50-55). Again, Chilimbi et al. does not teach ordering of each related object in the data set according to the affinity value between the related object and the selected object. Looking at an objective of the Chilimbi et al. reference, to improve the efficiency of cache line access (abstract), this makes sense. Chilimbi et al. is not teaching a strength of relationships between individual related objects, but the organizing of classes of objects so that those accessed contemporaneously are grouped together in cache for most efficient cache utilization."

This is not found persuasive for the reasons given below. Chilimbi teaches affinity value between each of the related objects and the selected object is the weight assigned to the edge in the affinity graph to represent the field affinity which is a function of temporal information and execution frequency with each data structure access point as derived from the trace file. Chilimbi further discloses in column 17-18 an object affinity graph is a weighted undirected graph in which nodes represent objects and edges encode temporal affinity between objects. From Chilimbi, it is therefore clear that the weight assigned to the edge in the affinity graph represents the relationship strength between the related object and the selected object. Moreover, Chilimbi teaches reordering in the re-creation of the affinity graph wherein edges between data elements in different data structures are not even put in the model for building the affinity graph-column 7 and field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout configuration affinity. In the recreation of the affinity graph, a temporal ordering of base object

addresses occurs and the object with the highest affinity edge weight is picked and a greedy depth-first traversal of the entire object affinity graph starting from the selected object is performed (column 18). Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected object. In the picking of the first node and the next node, etc., the related objects are ordered according to the affinity weights and the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches ordering each of the related objects in the data set according to the affinity value between the related object and the selected object.

4. Applicant argues in essence with respect to claim 1 and similar claims that:

> "Yet another feature Applicant claims that the Chilimbi et al. reference does not teach is the calculating of an affinity value between each of the related objects and the selected object based upon one or more criteria, wherein the one or more criteria includes a subjective measurement. As discussed above, Chilimbi et al. do not teach calculating an affinity value between each of the related objects and the selected object. Further, Chilimbi et al. do not teach the one or more criteria including a subjective measurement. Applicant understands the Office to support the rejection of the subjective criteria feature by stating that 'Metrics have been used to evaluate structure field orders wherein the re-ordering takes place by the greedy algorithm taking into consideration of the subjective measurement such as the metadata created by the programmer wherein the re-ordering accounts for the field constraints defined by the metadata." The Office then vaguely cites Figures 2-3, 5, and 7, and columns 6-10. Unfortunately, it appears that it is the Office that

has attributed 'subjective measurement' to the metadata described by Chilimbi et al., and not the reference itself. According to Chilimbi et al., 'metadata identifies constraints such as those related to elements being passed outside the program, those having pointers to them or references to them'' (col. 9, lines 44-47). Although the Office may have attributed subjective measurement to metadata, Chilimbi et al. does not teach subjective measurement. It is the reference that must teach each and every element as claimed by Applicant, not the Office."

This is not found persuasive for the reasons given below. First of all, the claim limitation set forth in the claim 1 recites "the one or more criteria includes a subjective measurement." Therefore, if the prior art teaches one criteria such as an objective measurement other than the subjective measurement, it teaches the claim limitation in which the subjective measurement is only an alternative as recited in the claim. Moreover, Chilimbi teaches affinity graphs can be drawn based on the database objects in the cache block for each object and metrics have been used to evaluate structure field orders wherein the re-ordering takes place by the greedy algorithm taking into consideration of one or more criteria including **the subjective measurement such as the metadata created by the programmer, i.e.,** *the programmer's subjective measurement for imposing the constraints which determines the reordering of the layout in the affinity graph,* wherein the re-ordering accounts for the field constraints defined by the metadata created by the programmer. Moreover, the subjective measurement such as the recommended changes can be incorporated in the generation of the layout recommendation to

perform the dynamic reordering of fields and to provide ordered list of data objects. See Figures 2-3, 5 and 7; column 6-10.

5. Applicant argues in essence with respect to claim 5 and similar claims that:

"According to the Office, the reference teaches Applicant's independent claim 5 as supported by Figures 2-3, 5, and 7 of the Chilimbi et al. reference, and columns 6-10. Unfortunately, the Office fails to identify what in the cited figures teaches various elements, or any specific reference in the volume of cited text. For example, Applicant does not here address whether or not Chilimbi et al. actually teach generating a graphical layout, but Applicant does claim a method for generating a graphical layout which includes selecting a principal node. The Oftice supports the rejection by asserting 'such as the node a.' Applicaùt respectfully points out that, under 35 USC 102, it is the reference that must teach each and every element as set forth in Applicant's claim, and not the Office. Although the Office has arbitrarily selected 'node a'' to be a principal node (and, node a of Figure 3, so the Applicant assumes), Applicant respectfully requests citation to the reference that supports node a, or any other node, is a principal node."

This is not found persuasive for the reasons given below. Chilimbi teaches reordering in the re-creation of the affinity graph wherein edges between data elements in different data structures are not even put in the model for building the affinity graph-column 7 and field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout configuration

affinity. In the recreation of the affinity graph, a temporal ordering of base object addresses occurs and the object with the highest affinity edge weight is picked and a greedy depth-first traversal of the entire object affinity graph starting from the selected object is performed (column 18). Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected object. In the picking of the first node and the next node, etc., the related objects are ordered according to the affinity weights and the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches picking the first node with the highest affinity edge as the principal node in the reordering and recreation of the affinity graph.

6. Applicant argues in essence with respect to claim 1 and similar claims that:

> "Chilimbi does not teach an affinity curve."

This is not found persuasive for the reasons given below. Chilimbi teaches affinity graph such as Figs. 3, 5, and 19 having affinity curves such as the affinity curves in Fig. 3 and arrowed lines in Fig. 19.

7. Applicant argues in essence with respect to claims 15, 19-20 and 26-27and similar claims that:

> "According to the Office, Applicant's independent claim 15 encompasses the same scope of invention as that of claims 1, 8, and 13. Applicant respectfully disagrees. Specifically, claims none of claims 1, 8, or 13 recite such features as determining, for a plurality of items from the data set, a set of properties. Claims 1, 8, and 13 also do not recite that the

set of properties includes a relationship to each other of the subsets of items in the data set, and a value applied to the relationships between the items. Claims 1, 8, and 13 also do not recite applying local rankings of the relationships between terms in which the applying is accomplished by ranking items I that relate to each item j, and ranking all items k to which item j relates, thereby ranking the affinity of each item j to item sets i and k. Further, claims 1, 8, and 13 do not recite generating a graphical visualization by presenting results separately for each item in a data set and adjusting the presentation to avoid information overlap and overload. Applicant has addressed claims 1, 8, and 13 above. However, Applicant further points out that the Chilimbi et al. reference does not teach or suggest generating a graphical visualization of items from data sets as claimed by Applicant. Chilimbi et al. do teach providing ttone of many graphical representations such as that shown in Figure 7" (col. 10, lines 29-31). Figure 7, as discussed above, illustrates a block representation of the resulting recommended layout of two cache blocks thatrelate to the simplified data structure A defined in Figure 2 (col. 10, lines 15-17). Applicant is not claiming a layout of a cache block.."

This is not found persuasive for the reasons given below. Chilimbi teaches reordering in the re-creation of the affinity graph wherein field layout is optimized for inherent locality by placing fields that show strong affinity close to each other using a greedy algorithm to produce structure field order recommendations from a structure field affinity graph-column 8 in the sense that re-ordering takes place for the layout configuration affinity. In the recreation of the affinity graph, a temporal ordering of base object addresses occurs and the object with *the highest affinity*

edge weight is picked and a greedy depth-first traversal of the entire object affinity graph starting from the selected object is performed (column 18). Chilimbi discloses visiting the next node connected by the edge with the greatest affinity weight and thus the next node having the greatest affinity weight is picked among the related objects to the selected first object. In the picking of the first node and the next node as related to the first node, etc., the related objects are ordered according to the affinity weights so that the node with the greatest affinity weight is picked. Therefore, Chilimbi teaches ranking items I that relate to the selected first object, and ranking items k to which the selected first object relates and thereby ranking the affinity of the selected first object to items I and k. Moreover, Chilimbi clearly teaches in Figs. 3, 5 and 19 generating a graphical visualization by presenting results separately for each item in a data set and adjusting the presentation by re-ordering or recreating the graphical layout to avoid information overlap and overload.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

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